



***DARPA*Tech**

2002 Symposium

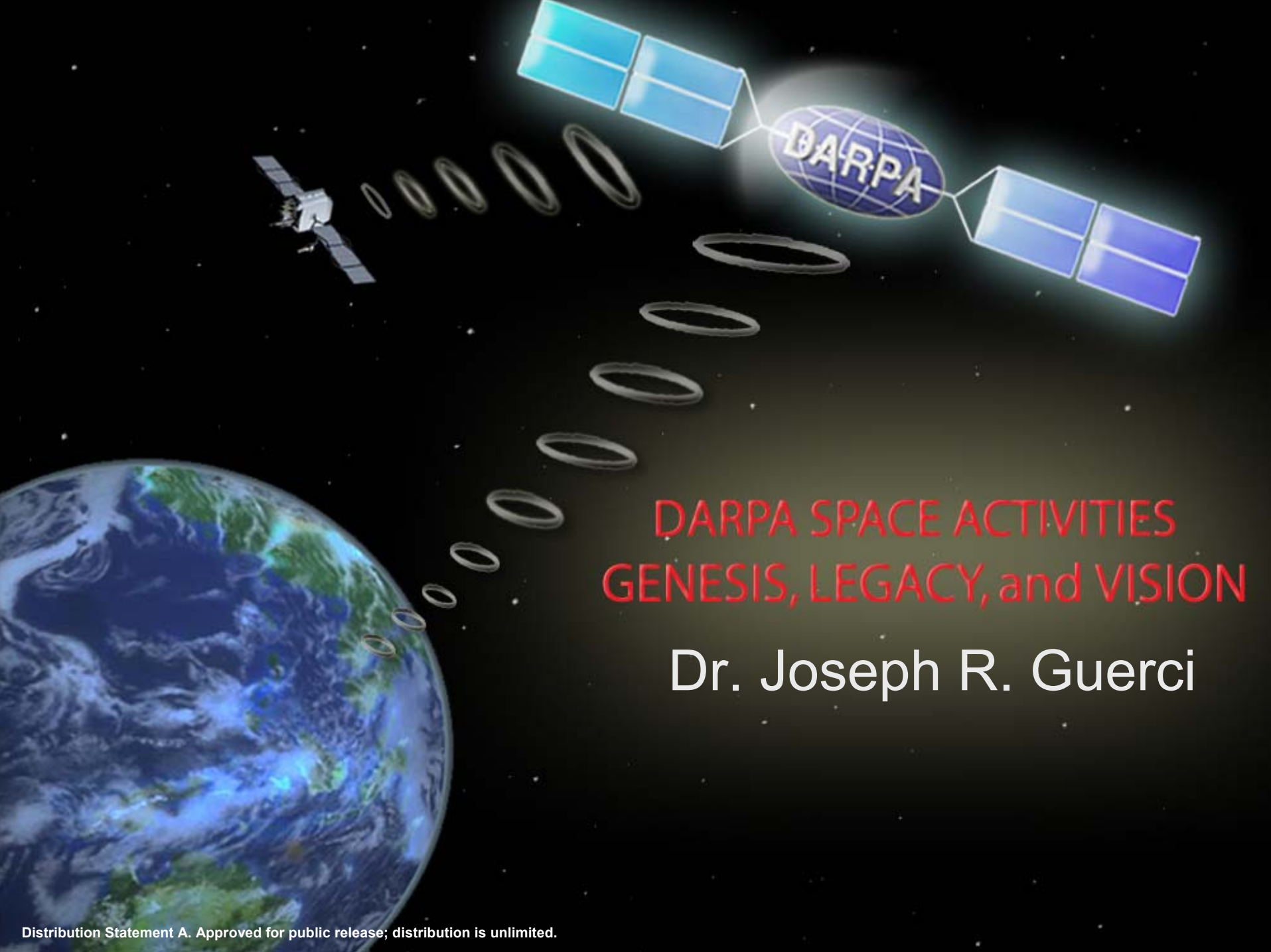
Transforming
Fantasy



Joe Guerici

Deputy Director,
Special Projects Office





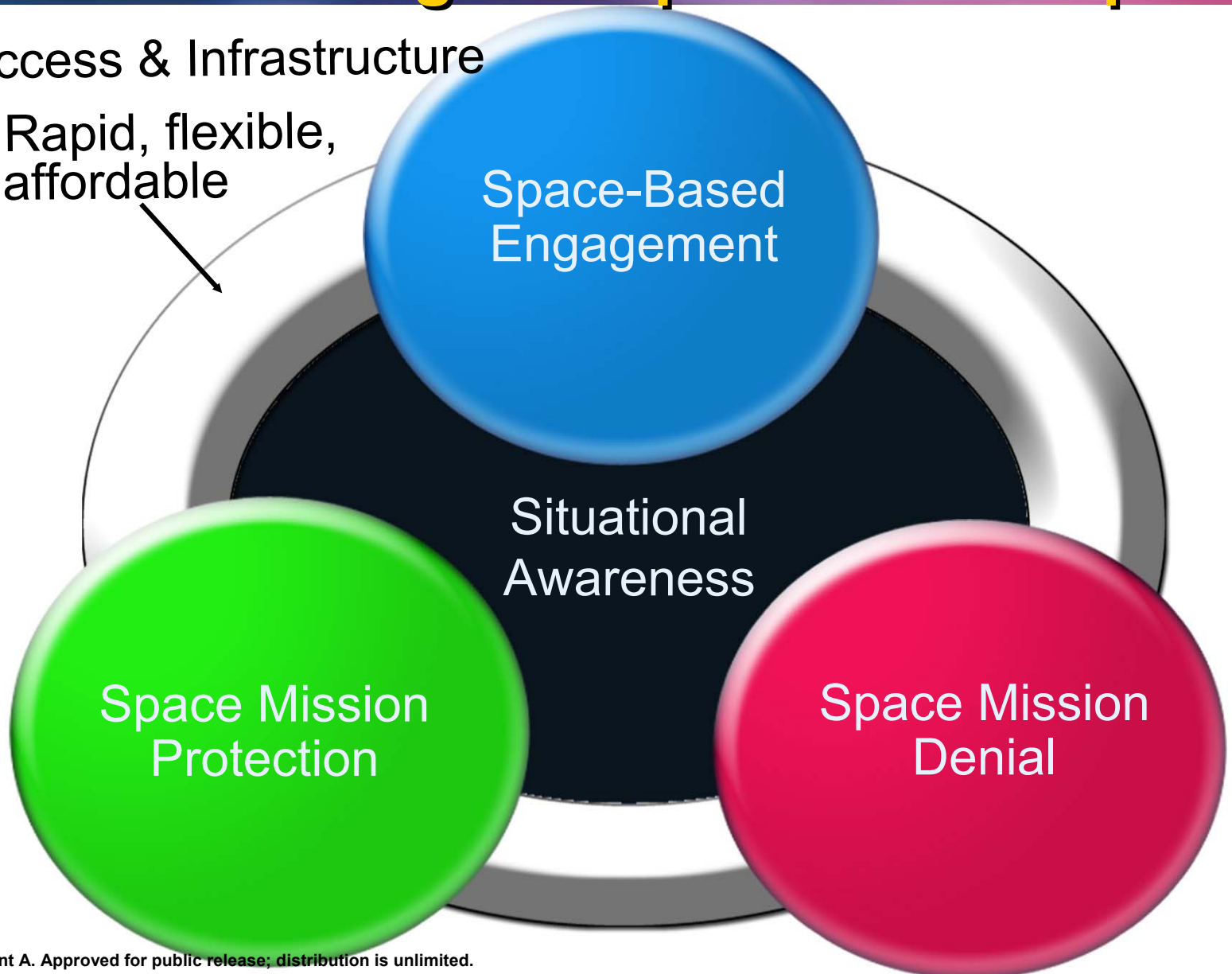
DARPA SPACE ACTIVITIES GENESIS, LEGACY, and VISION

Dr. Joseph R. Guerici

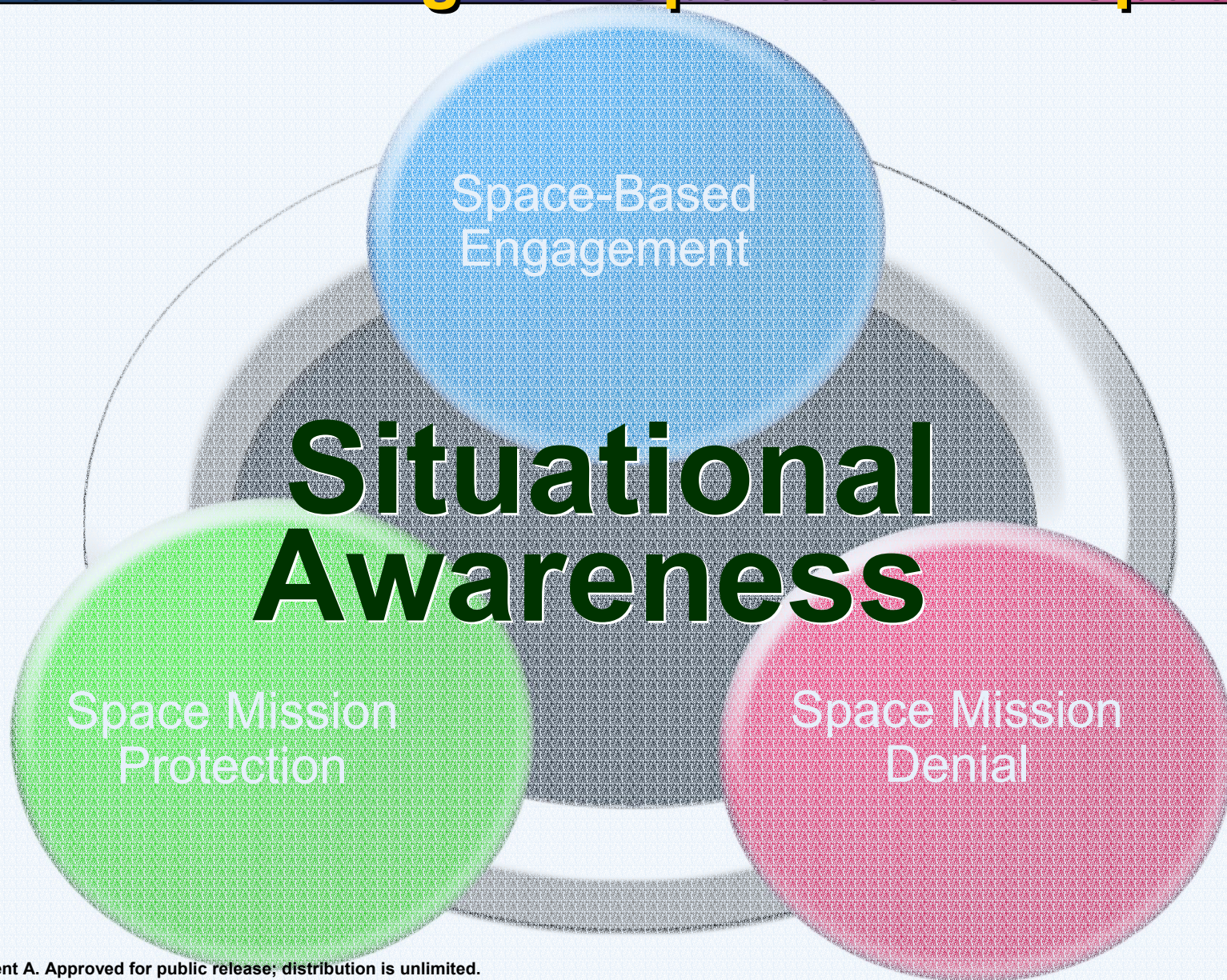
Tactical Warfighter Operations in Space

Access & Infrastructure

- Rapid, flexible, affordable



Tactical Warfighter Operations in Space



Tactical Warfighter Operations in Space

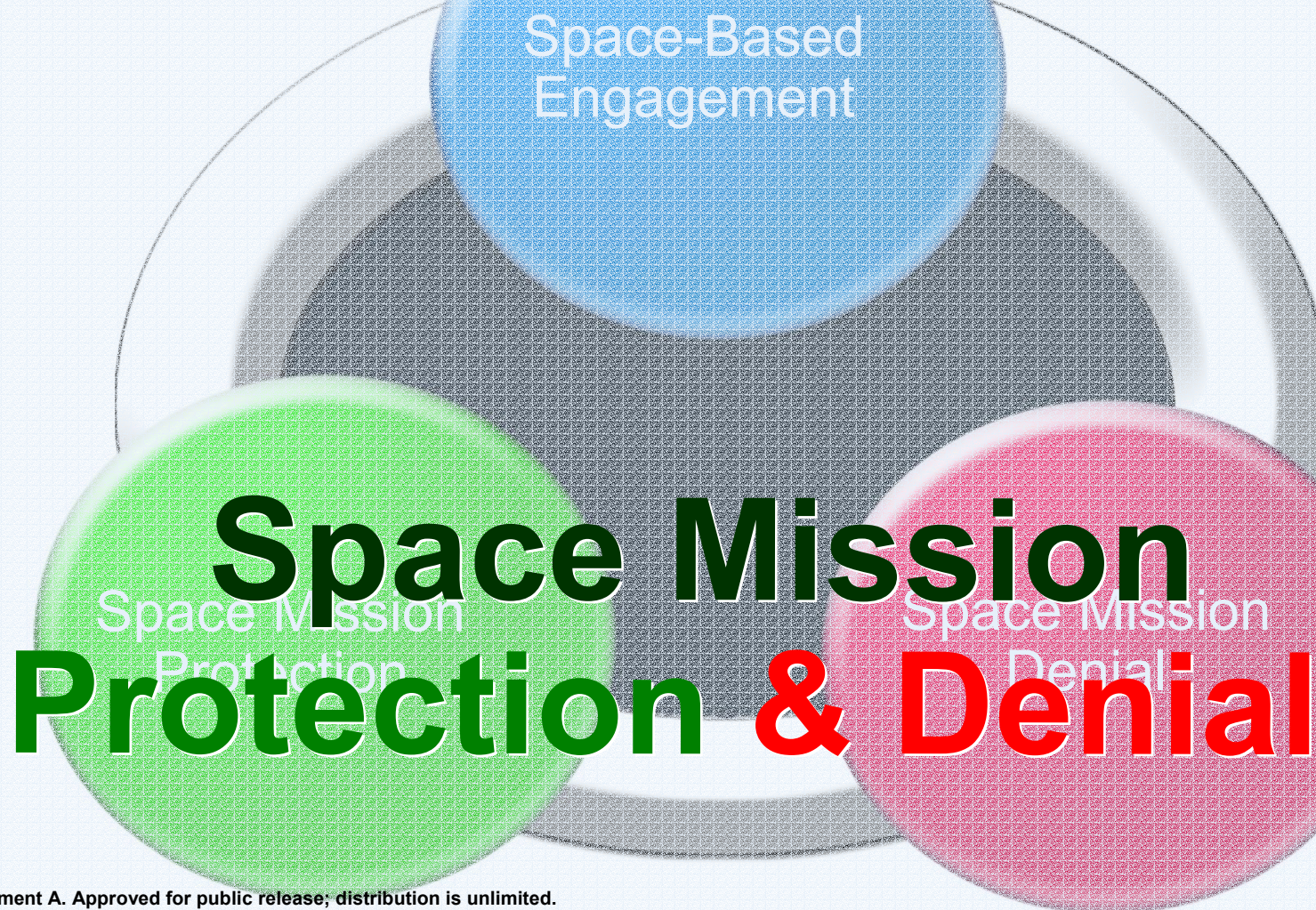
Space-Based Engagement



Space Mission
Protection

Space Mission
Denial

Tactical Warfighter Operations in Space

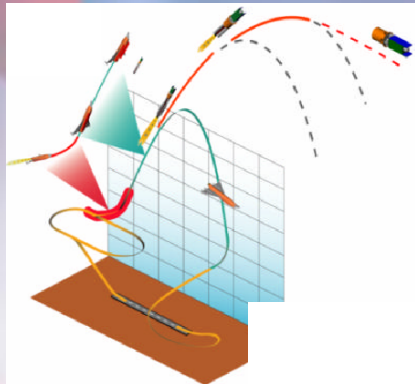


Access is Key

Continuum of Options and Opportunities

Direct ← **Access** → *Indirect*

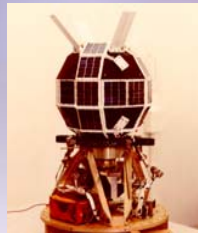
Affordable Launch
Vehicles & Access



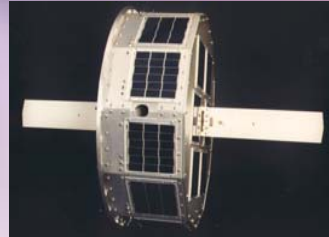
RASCAL

Microsatellites
Secondary/Piggyback Payloads

GLOMR



MICROSAT

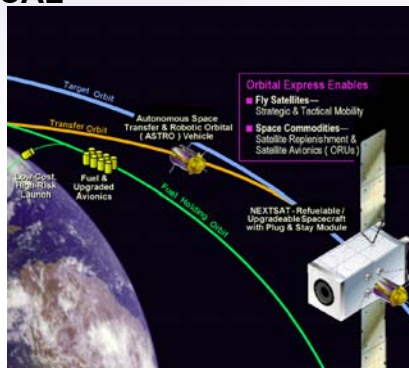


Microsatellites

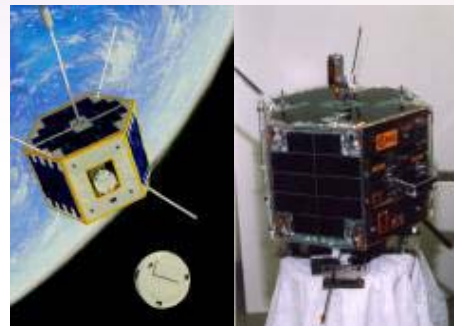
Payload/Spacecraft
"Compression"



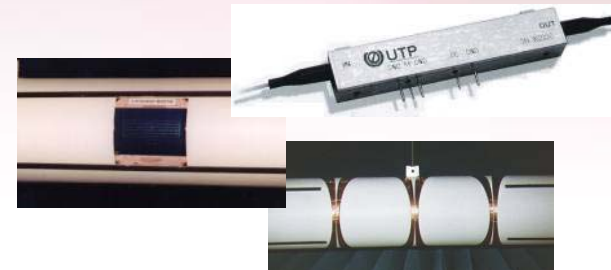
Rigidized Inflatable Structures



Orbital Express

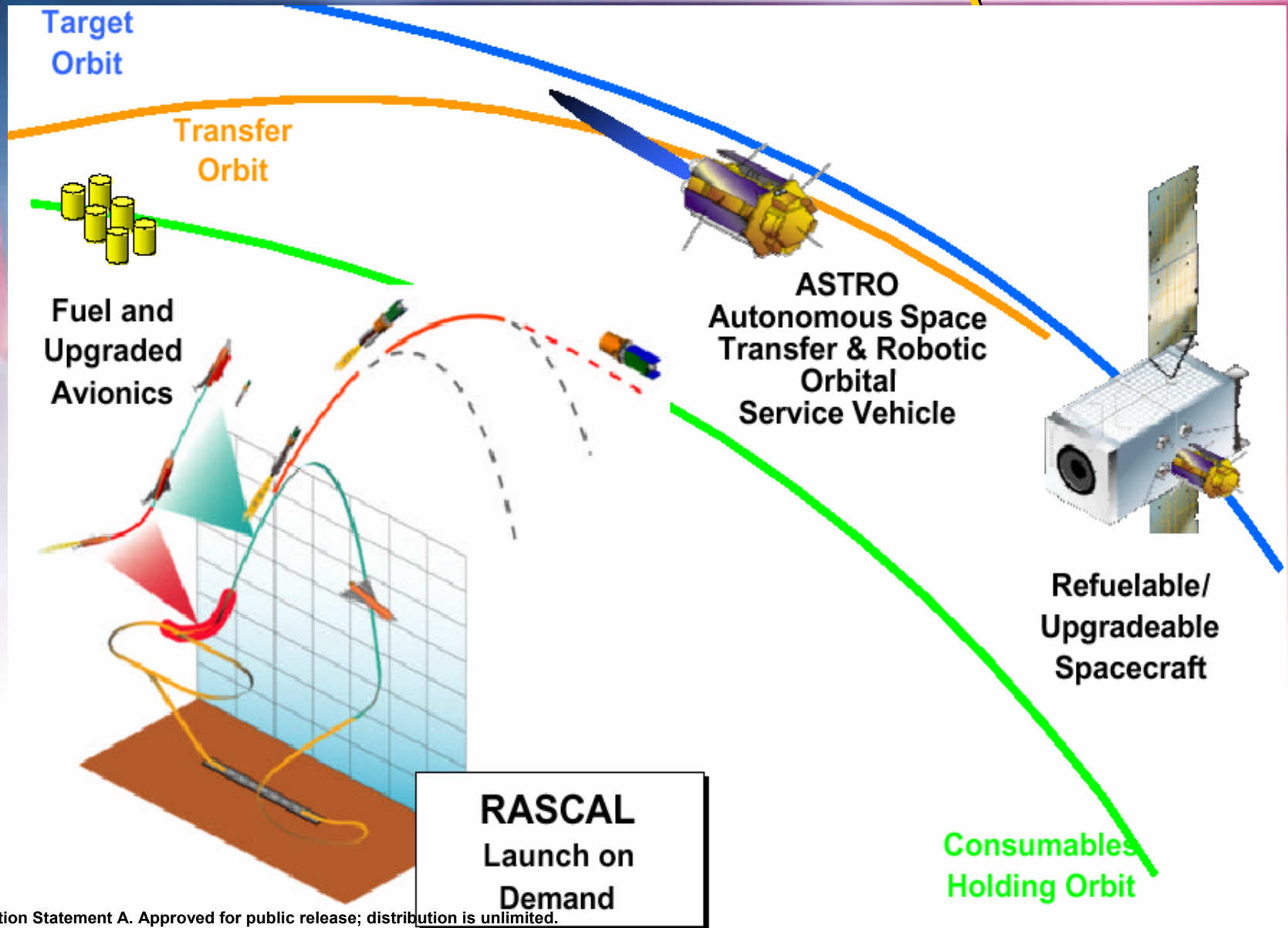


**Picosatellites
(OPAL)**

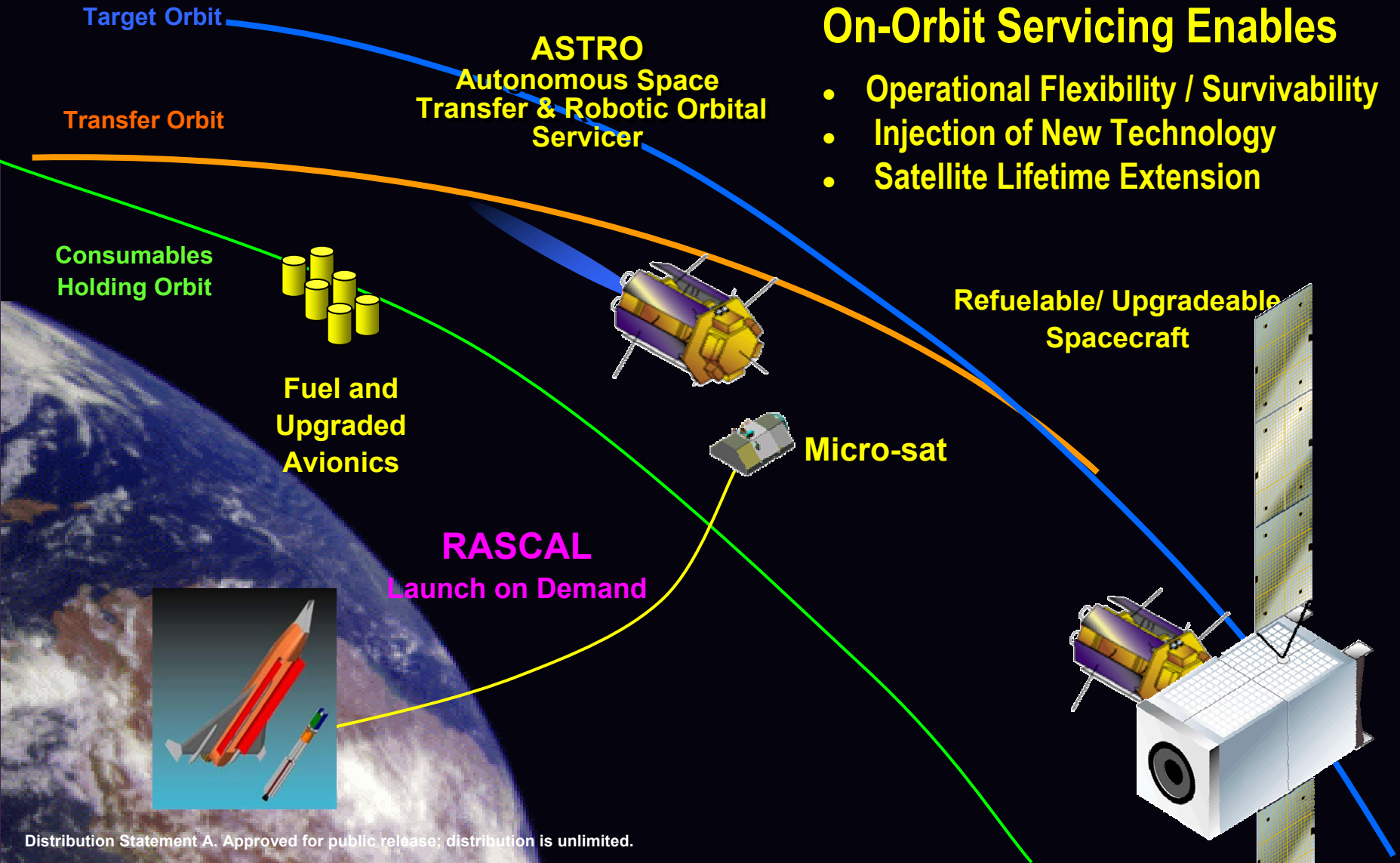


**Lightweight/Flexible Electronics
(Photonics, Solar Cells, Antennas, etc.)**

Responsive Access, Small Cargo, Affordable Launch (RASCAL)



Orbital Express – Robotic Servicing of Satellites

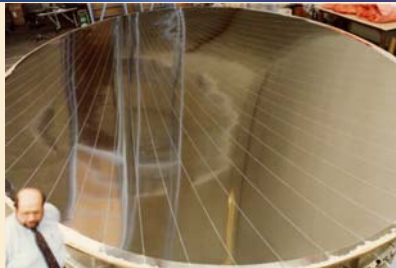


Compressible Structures Technologies



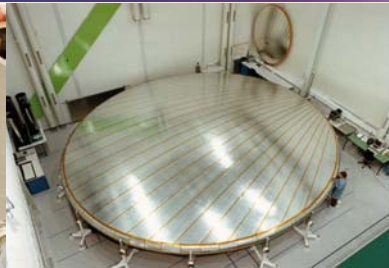
ECHO BALLOONS

1960



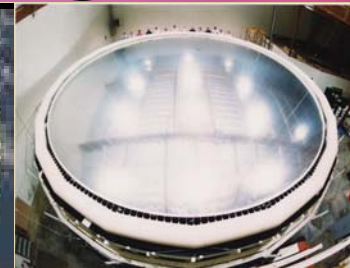
REFLECTOR ANTENNAS

1980

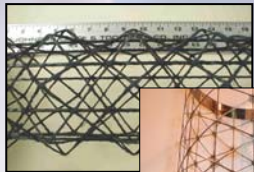


INFLATABLE ANTENNA EXPERIMENT

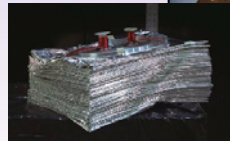
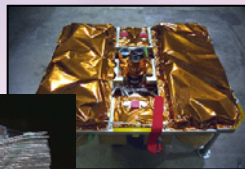
1996



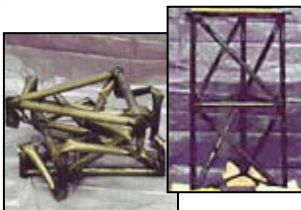
ILC DOVER



L'Garde



Rigidized inflatables and composite joint materials support large aperture deployments



L'Garde deployment concept

Foster-Miller

Sampling of Current Space Activities

- ▶ **Rascal –**
Mr. Preston Carter
- ▶ **Orbital Express –**
Maj. James Shoemaker, PhD
- ▶ **Space Situational Awareness –**
Dr. Timothy Grayson
- ▶ **Space Imaging –**
Lt Col Gregory Vansuch, PhD
- ▶ **ISAT –**
Dr. Joseph Guercci





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